REMARKS

Claims 1-20 are now pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the remarks contained herein.

REJECTION UNDER 35 U.S.C. § 103

Applicant respectfully traverses the rejection of Claims 1-8 and 11-13 under 35 U.S.C. § 103(a) as being unpatentable over Paul et al. (U.S. Pat. No. 5,332,927) in view of Flaugher (U.S. Pat. No. 5,990,575).

Referring to Claim 1, Paul et al. does not show, teach, or suggest a contactor that connects batteries to a load as recited.

Paul et al. teaches a transfer switch that switches between a main AC line and an AC engine/generator to power a load and batteries. The transfer switch does not disconnect the batteries from the load. Therefore, if both AC sources fail, the load will drain the batteries and cause damage.

Paul et al. also does not show, teach, or suggest a controller that opens the contactor when a voltage of the batteries falls below a low voltage disconnect threshold and closes the contactor after an AC source returns while minimizing voltage transients and current surge during reconnection.

Paul et al. teaches toggling the transfer switch when power from the main AC line fails so that AC power is provided from the AC engine/generator. The transfer switch is not toggled when a voltage of the batteries falls below a threshold. The batteries in Paul et al. are always connected to the load.

Flaugher does not remedy the shortcomings of Paul et al. Flaugher teaches a controller that includes relays. The relays allow the controller to selectively provide power from an auxiliary power source to different combinations of loads, which are connected to batteries. The relays do not disconnect the batteries from the loads as required by the claims.

Flaugher also teaches activating the auxiliary power source when a main AC line fails. The controller sequentially applies power from the auxiliary power source to different loads to prevent power surge currents. The relays are not activated when a voltage of one or more of the batteries falls below a threshold. The batteries in Flaugher are always connected to the loads.

Applicants disconnect the battery contactor when the backup battery voltage falls below a low voltage disconnect threshold to prevent damage to the batteries due to excessive discharge. Page 2, line 3. This is different from switching between two AC power sources as taught by Paul et al. and Flaugher. If the main and backup power sources were to fail in the inventions taught by Paul et al. and Flaugher, the batteries would remain connected to the loads, potentially risking damage to the batteries due to excessive discharge.

Claims 2-10 depend directly or indirectly from Claim 1 and are allowable over Paul et al. and Flaugher for the same reasons.

Referring to Claim 11, Paul et al. does not show, teach, or suggest disconnecting batteries from a load using a controller when the output voltage of the batteries falls below a low voltage disconnect threshold.

Paul et al. activates an auxiliary power system when a main AC power system fails to supply power to a battery that is connected to a load. Paul et al. does not disconnect the battery from the load when the voltage of the battery falls below a threshold. Paul et al. teaches that the batteries are always connected to the load.

Flaugher does not remedy the shortcomings of Paul et al. Flaugher activates an auxiliary power source when a power failure is detected to power a load that is connected to backup batteries. Flaugher does not teach disconnecting the backup batteries from the load when the voltage of the backup batteries falls below a threshold. The backup batteries in Flaugher are always connected to the load.

On page 2, line 5, Applicant teaches that backup batteries often constitute approximately 50% of the cost of a telecommunications power system. Operators often disconnect the backup batteries and accept loss of service to prevent damage to the backup batteries. The inventions of Paul et al. and Flaugher do not teach disconnecting the backup batteries from the load, which puts the useful life of the batteries at risk.

Claims 12 and 13 depend directly or indirectly from Claim 11 and are allowable over Paul et al. and Flaugher for the same reasons.

Referring to Claim 14, Paul et al. and Flaugher do not show, teach, or suggest a contactor that connects a battery module to a power bus.

Paul et al. teaches backup batteries that have a common connection with a load, a rectifier, and an auxiliary power system. A contactor does not connect the backup batteries to any of the other components. Flaugher teaches batteries that each have a common connection with a load, a rectifier, and an auxiliary power. A contactor does not connect the batteries to any of the other components.

Paul et al. and Flaugher also do not show, teach, or suggest a controller that disconnects the battery module using the contactor when a voltage of the battery module falls below a low voltage disconnect when rectifier modules fail to provide power, wherein the controller minimizes current surge and high voltage transients when the rectifier modules begin to provide power and the controller reconnects the battery module to the load.

As discussed above, Paul et al. teaches toggling a transfer switch when power from a main AC line fails so that AC power is provided from an AC engine/generator to batteries and a load. The transfer switch is not toggled when a voltage of the batteries falls below a threshold. The batteries in Paul et al. are always connected to the load.

As discussed above, Flaugher teaches activating an auxiliary power source when a main AC line fails to provide power to batteries that are connected to loads. A controller sequentially applies power from the auxiliary power source to the different loads to prevent power surge currents. The relays are not activated when a voltage of one or more of the batteries falls below a threshold. The batteries in Flaugher are always connected to the loads.

Farmer does not remedy the shortcomings of either Paul et al. or Flaugher. Farmer teaches a battery that is connected to a rectifier and a load. A disconnect switch interrupts the current to the system when the current supplied by the rectifier exceeds the current received by the load by a predetermined value. The disconnect switch does not interrupt the current flow to the battery when the battery falls below a voltage threshold. The disconnect switch also does not interrupt the current flow to the battery when the rectifier fails to provide power.

For the foregoing reasons, Applicants believe that Claim 14 is in condition for allowance. Claims 15-20 depend directly or indirectly from Claim 14 and are allowable over Paul et al., Flaugher, and Farmer for the same reasons.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1211.

Respectfully submitted,

Dated: 4/3/03

By: _____
Michael D. Wiggins
Reg. No. 34,754

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1 mo. OA / Response Due 3-19-03

OIPE JC1700 APR 08 2003 PATENT & TRADEMARK OFFICE

Office Action Summary

Application No.	Applicant(s)	
09/587,095	GOT ET AL.	
Examiner	**Art Unit**	
Brandon J Miller	2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-8 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paul in view of Flaugher.

Regarding claim 1 Paul teaches a telecommunications power system with a battery connection module that is connected to a plurality of batteries (see col. 6, lines 27-30). Paul teaches a load, and a rectifier that is connected to a load, a battery connection module, and an alternating current source (see col. 6, lines 27-31, 39-44, & 56-59). Paul teaches a contactor that connects a battery to a load and a controller connected to a contactor (see abstract and col. 6, lines 28-31). Paul does not teach a controller that opens a contactor when a voltage of a battery falls below a low voltage disconnect threshold and closes a contactor after an AC source returns minimizing voltage transients and current surge during reconnection. Flaugher teaches a controller that opens a contactor when a current of a battery falls below a low current disconnect threshold and closes a contactor after an AC source returns minimizing transients and current surge during reconnection (see abstract and col. 4, lines 47-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the Paul adapt to include a controller that opens a contactor when a voltage of a battery falls below a low voltage disconnect threshold and closes a contactor after an AC source returns minimizing voltage

transients and current surge during reconnection because this would allow for minimal disruption of an uninterruptible power supply connected to a load apparatus.

Regarding claim 2 a device as recited above is taught except for a controller that lowers a voltage of a rectifier module to a voltage of a battery connection module. Flaugher further teaches a controller that brings a voltage of a rectifier module to a voltage of a battery connection module to a steady state of operation (see abstract col. 3, lines 66-67, and col. 4, lines 6-11 & 50-55). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the Paul and Flaugher adapt to include a controller that lowers a voltage of a rectifier module to a voltage of a battery connection module because this would allow for the control of auxiliary power sources for distribution of backup power to communication devices.

Regarding claim 3 Flaugher teaches after closing a contact gradually increasing the voltage of a rectifier to a float voltage of batteries as batteries recharge (see col. 5, lines 9-12 & 20-23).

Regarding claim 4 Flaugher teaches loads that are connected by a distribution module to a power bus (see col. 3, lines 57-61 and col. 4, lines 5-10).

Regarding claim 5 Paul teaches a first analog to digital (A/D) converter and a neuron for transmitting a rectifier voltage signal to a controller (see col. 9, lines 14-19).

Regarding claim 6 a device as recited in claim 5 is taught above except for a second analog to digital converter and a second neuron module that includes a second analog to digital converter and a second neuron that generates and transmits a battery voltage signal to a controller. Paul does teach an analog to digital (A/D) converter and a neuron which functions as a processor for transmitting a rectifier voltage signal to a controller (see col. 9, lines 14-20).

Flaugher does teach multiple analog to digital (A/D) converters (see col. 4, lines 18-24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include second analog to digital converter and a second neuron module that includes a second analog to digital converter and a second neuron that generates and transmits a battery voltage signal to a controller because this would allow for parallel processing which would create faster recovery with two devices.

Regarding claim 7 Flaugher teaches a battery connection that senses a contactor voltage across a contactor (see col. 4, lines 9-15 & 39-41).

Regarding claim 8 Paul teaches a neuron for transmitting a contactor voltage signal to a controller (see col. 9, lines 14-20).

Regarding claim 11 Paul providing power to a load in a telecommunication system that includes a battery subsystem with a plurality of batteries (see col. 6, lines 27-30). Paul teaches a load, and a rectifier that is connected to a load, a battery connection module, and an alternating current source (see col. 6, lines 27-31, 39-44, & 56-59). Paul teaches a contactor that connects a battery to a load and a controller connected to a contactor (see abstract and col. 6, lines 28-31). Paul does not teach monitoring voltage that is output by batteries, a controller that opens a contactor when a voltage of a battery falls below a low voltage disconnect threshold and closes a contactor after an AC source returns minimizing voltage transients and current surge during reconnection. Flaugher teaches monitoring voltage that is output by batteries (see abstract and col. 4, lines 5-10). Flaugher also teaches a controller that opens a contactor when a current of a battery falls below a low current disconnect threshold and closes a contactor after an AC source returns minimizing transients and current surge during reconnection (see abstract and col. 4, lines

47-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the Paul adapt to include a controller that opens a contactor when a voltage of a battery falls below a low voltage disconnect threshold and closes a contactor after an AC source returns minimizing voltage transients and current surge during reconnection because this would allow for power saving of an uninterruptible power supply connected to a load apparatus.

Regarding claim 12 Paul and Flaugher teach a device as recited in claim 2 and is rejected given the same reasoning as above.

Regarding claim 13 Paul and Flaugher teach a device as recited in claim 3 and is rejected given the same reasoning as above.

Claims 9-10 and 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paul in view of Flaugher and Farmer.

Regarding claim 9 Paul and Flaugher teach a device as recited in claim 8 except for a controller that is connected by a communication bus that employs a serial communications protocol to a first and second neurons. Paul further teaches a processor for transmitting a rectifier voltage signal to a controller (see col. 9, lines 14-19). Farmer teaches a controller that that employs serial communication in a power system for communication between processors (see col. 8, lines 33-42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the Paul and Flaugher adapt to include a controller that is connected by a communication bus that employs a serial communications protocol to a first and second neurons because this would allow for the use of communication protocols to be used for the control of auxiliary power sources.

Regarding claim 14 Paul teaches a telecommunications power system comprising a power bus, a battery module, a contactor that connects a battery module to a power bus, a distribution module that is connected to a power bus, and a plurality of loads connected by a distribution module (see abstract, col. 3, lines 3-9 & 12-15 and col. 9, lines 18-19). Paul teaches a rectifier module that is connected to a plurality of alternating current power sources (see col. 3, lines 10-12). Paul does not teach a plurality of rectifiers, a controller that disconnects a battery module when a voltage of a battery module falls below a low voltage disconnect when a rectifier modules fail to provide power, wherein a controller minimizes current surge and high voltage transients when a rectifier modules begin to provide power and controller reconnects a battery module to a load. Flaugher teaches a controller that disconnects a battery module when a voltage of a battery module falls below a low voltage disconnect when a rectifier fails to provide power (see col. 4, lines 47-52). Flaugher also teaches a controller that minimizes current surge and high voltage when a rectifier begins to provide power and a controller reconnects a battery module to a load (see abstract and col. 4, lines 47-60). Farmer teaches a plurality of rectifiers (see col. 8, lines 25-28). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the Paul adapt to include a plurality of rectifiers, a controller that disconnects a battery module when a voltage of a battery module falls below a low voltage disconnect when a rectifier modules fail to provide power, wherein a controller minimizes current surge and high voltage transients when a rectifier modules begin to provide power and controller reconnects a battery module to a load because this would allow for power saving of an uninterruptible power supply connected to a load apparatus.

Regarding claim 15 Paul and Flaugher teach a device as recited in claim 2 and is rejected given the same reasoning as above.

Regarding claim 16 Paul and Flaugher teach a device as recited in claim 3 and is rejected given the same reasoning as above.

Regarding claim 17 Flaugher teaches a controller that is connected to a communications bus (abstract).

Regarding claim 18 Paul and Flaugher teach a device as recited in claim 5 and is rejected given the same reasoning as above.

Regarding claim 19 Paul and Flaugher teach a device as recited in claim 6 and is rejected given the same reasoning as above.

Regarding claim 20 Paul and Flaugher teach a device as recited in claim 7 and is rejected given the same reasoning as above.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Paul in view of Flaugher, Farmer andLuebke.

Regarding claim 10 a device as recited in claim 9 is taught above except for employing a CAN protocol. Luebke further teaches using a controller that that employs serial communications (see col. 1, lines 45-50 and col. 3, lines 20-23). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device above adapt to include employing a CAN protocol because this would allow for the use of variable communication protocols to be used for the control of auxiliary power sources.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kawabe U.S Patent No. 6,201,371 discloses an uninterruptible power system.

Savage U.S. Patent No. 5,978,237 discloses a power recovery system.

Shannon U.S. Patent No. 6,169,384 discloses a power source system for portable electronic devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon J Miller whose telephone number is 703-305-4222. The examiner can normally be reached on Mon.-Fri. 8:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 703-308-5318. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

***

December 8, 2002

WILLIAM TROST
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Notice of References Cited

Application/Control No.	Applicant(s)/Patent Under Reexamination	
09/587,095	GOT ET AL.	
Examiner	Art Unit	Page 1 of 1
Brandon J Miller	2683	

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,990,575	11-1999	Flaugher	307/23
	B	US-5,332,927	06-1994	Paul	307/66
	C	US-5,642,100	06-1997	Farmer	340/636
	D	US-5,999,389	12-1999	Luebke	361/68
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/587,095	06/02/2000	Pierre Got	3165A-000007	6175

7590 12/19/2002

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EXAMINER
MILLER, BRANDON J

ART UNIT	PAPER NUMBER
2683	

DATE MAILED: 12/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

2683

HDP/SB/21 based on PTO/SB/21 (08-00)

Please type a plus sign (+) inside this box → +

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	09/587,095
Filing Date	June 2, 2000
First Named Inventor	Got et al.
Group Art Unit	2683
Examiner Name	Brandon J. Miller
Total Number of Pages in This Submission	
Attorney Docket Number	3165A-000007

ENCLOSURES *(check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☒ Amendment / Response
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
  - ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Assignment Papers *(for an Application)*
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) ____
- ☐ After Allowance Communication to Group
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to Group *(Appeal Notice, Brief, Reply Brief)*
- ☐ Proprietary Information
- ☐ Status Letter
- ☒ Other Enclosure(s) *(please identify below)*:
  Return Postcard.

Remarks

The Commissioner is hereby authorized to charge any additional fees that may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 08-0750. A duplicate copy of this sheet is enclosed.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm *or* Individual name	Harness, Dickey & Pierce, P.L.C.	Attorney Name Michael D. Wiggins	Reg. No. 34,754
Signature	Michael D Wiggins		
Date	April 3, 2003		

CERTIFICATE OF MAILING/TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, or facsimile transmitted to the U.S. Patent and Trademark Office on the date indicated below.

Typed or printed name	Stephanie Provost		
Signature	Stephanie Provost	Date	April 3, 2003